FE354

Diagram No. 1222-5

NOAA FORM 76-35A

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE

DESCRIPTIVE REPORT

Type of Survey ... Side Scan Sonar

Field No. ... HE-10-8-90

Registery No. ... FE-354SS

LOCALITY

State ... Virginia

General Locality ... Atlantic Ocean

Sublocality ... SE Approaches to Chesapeake Bay

1990

CHIEF OF PARTY
LCDR S.R. Iwamoto

LIBRARY & ARCHIVES

DATE ... June 12, 1992

☆U.S. GOV. PRINTING OFFICE: 1985—566-054

FE354

EC/G

PRODUCTS

✓12208
✓12221
✓12207
✓12205 'A'
✓12260
✓12200
13003 N/C

NOAA FORM 77-28
(11-72)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

HYDROGRAPHIC TITLE SHEET

REGISTER NO. FE-354SS

INSTRUCTIONS - The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

FIELD NO. HE-10-8-90

State Virginia

General locality Atlantic Ocean

Locality Approaches to Chesapeake Bay

Scale 1:10,000 Date of survey October 2 - 3, 1990

Instructions dated September 5, 1990* Project No. OPR-D111-HE

Vessel NOAA Ship HECK (EDP 9140)

Chief of party LCDR Stanley R. Iwamoto, NOAA

Surveyed by LCDR S.R. Iwamoto, LT D.W. Moeller, LT D.S. Wilkes, LTJG K.N. Harbison, ST W.R. Morris

Soundings taken by echo sounder, hand lead, ~~pole~~

Graphic record scaled by LT Moeller, LTJG Harbison

Graphic record checked by LT Moeller, LTJG Harbison

Protracted by Automated plot by HDAPS (FIELD) XYNETICS 1200 Plotter (AHS)

Verification by Atlantic Hydrographic ~~Survey~~ Section Personnel

Soundings in ~~fathoms~~ ~~feet~~ at ~~MLW~~ MLLW Meters

REMARKS: All times UTC

* Change 1 dated September 20, 1990

* Change 2 dated October 4, 1990

Notes in red were made during office processing.

AWOIS/SURF ✓ 6/14/96
SS

KWW 5/23/94

NOAA FORM 77-28 SUPERSEDES FORM C&GS-537.

☆ U.S. GOVERNMENT PRINTING OFFICE: 1978-665-010-1174

DESCRIPTIVE REPORT APPENDICES

I. DANGER TO NAVIGATION REPORTS No Danger to Nav. reports

II. NON-FLOATING AIDS AND LANDMARKS FOR CHARTS NONE

III. LIST OF HORIZONTAL CONTROL STATIONS

* IV. GEOGRAPHIC NAMES (FIELD) - None given

* V. TIDES AND WATER LEVELS

* VI. SUPPLEMENTAL CORRESPONDENCE - none

VII. APPROVAL SHEET

SEPARATES TO BE INCLUDED WITH SURVEY DATA

* I. HYDROGRAPHIC SHEETS AND PARAMETERS

* II. BOTTOM SAMPLES

* III. HORIZONTAL POSITION CONTROL AND CORRECTIONS TO POSITION DATA

* IV. SOUNDING EQUIPMENT CALIBRATIONS AND CORRECTIONS

* V. SIDE SCAN SONAR DATA

* VI. ITEM INVESTIGATION DATA

* filed with the original field records

DESCRIPTIVE REPORT TO ACCOMPANY
SURVEY FE-354SS
FIELD NUMBER HE-10-8-90
VIRGINIA
ATLANTIC OCEAN
APPROACHES TO CHESAPEAKE BAY
Scale 1:10000
NOAA SHIP HECK S-591
LCDR Stanley R. Iwamoto, CMDG

A. PROJECT

This survey was conducted in accordance with Hydrographic Project Instructions OPR-D111-HE, Chesapeake Bay Entrance, Virginia, dated September 5, 1990, Change 1 - September 20, 1990 and Change 2 - October 4, 1990.

The purpose of this project is to investigate and resolve contacts located by the NOAA Ship WHITING during survey operations on H-10337.

B. AREA SURVEYED

The survey area lies in the Atlantic Ocean at the southern approach to Chesapeake Bay. The actual survey area consists of 19 discrete search areas lying within the boundaries of survey H-10337.

Survey operations were conducted on October 2, 1990 (DOY 275) and October 3, 1990 (DOY 276).

C. SURVEY VESSELS

All hydrographic data were collected by the NOAA Ship HECK (EDP 9140). No unusual vessel configurations were used.

D. AUTOMATED DATA ACQUISITION AND PROCESSING

Survey data acquisition and processing were accomplished utilizing the HDAPS system hardware and the latest version of the NAVITRONIC NAVISOFT 300 software provided to the ship by N/CG24. The versions and dates of the system software surveyed with were:

Name	Date	Function
SYSTEM-BA5	01 JUN 1990	BASIC Operating System
SURVEY 4.33	01 JUN 1990	Pre Survey & Survey Files
POSTSUR 4.15	31 JUL 1990	Post Survey Processing
FILESYS 1.56	01 JUN 1990	File Management
CONPLOT 1.70	01 JUN 1990	Off-line Plot

There is no digital record for positions 822-839 due to HDAPS data transfer failure. WHITING contacts investigated during this period were not rerun if either no or insignificant contacts were found. Items where significant contacts were found were rejected and rerun. Two items were found within these positions on SSS and are shown as Obstr (A) on the present survey. See Sheet 1 of 8.

E. SONAR EQUIPMENT

HECK is equipped with an EG&G model 260 slant range corrected Side Scan Sonar (SSS) recorder and model 272 dual frequency towfish. Serial numbers and dates of usage are as follows:

Towfish	S/N 10823	DOY 275 - 276
Recorder	S/N 0012104	DOY 275 - 276

The beam width and down angle are not adjustable on this unit. All SSS data was collected using the 100, 75 and 50 meter range scales and 100 Khz frequency. Line spacing of 180 meters was used for required disprovals.

Confidence Checks were obtained, and annotated on the sonargrams, by towing the side scan unit past known bottom features. Twice daily confidence checks were not obtained on all days as required, however, the sonargrams of items located matched those of the WHITING's accurately enough to confirm the units performance.

Required proof of sonar coverage, for disprovals, is demonstrated through the included swath plot. The hydrographer chose this method in lieu of the sonar coverage abstract. The choice of method is left to the hydrographer per Side Scan Sonar Manual section 3.1.3.

The sonar contact list (Side Scan Sonar Manual 3.1.1.1.) is provided through the automated HDAPS printout that is produced during the computation and logging of contacts. These printouts are located with the sonargrams on which they were identified.

Two contact tables were used during this survey. Table 12 contains the assigned contacts associated with this survey. Table 22 contains the contacts located during survey operations.

F. SOUNDING EQUIPMENT

The following Raytheon DSF-6000N echosounder was used during this survey:

S/N A110N	DOY	275 - 276

Both low and high frequency depths were digitized, but only high frequency depths were plotted.

G. CORRECTIONS TO ECHOSOUNDINGS

G1. Velocity Correctors

The following table shows dates and locations of velocity casts conducted using the ODOM Digibar sound velocimeter (S/N 168):

VELOCITY TABLE	DATE	LOCATION
2	10/02/90 (DOY 275)	36°55.1N 075°55.3W

The velocity cast data were reduced and velocity corrections calculated using program VELOCITY. The computed velocity correctors were then applied on line to echosounder depths (both high and low frequency) by entering the correction data into the HDAPS sound velocity table.

G2. Instrument Corrector

On DOY 071, instrument correctors were determined by conducting a dual leadline comparison of echosounder and leadline depths. Comparison resulted in a mean difference of 0.020 meter or a corrector of 0.0 meter.

G3. Vessel Draft Corrector

A static draft of 2.10 meters was applied on line to all echosoundings via the HDAPS offset table.

G4. Settlement and Squat Correctors

Settlement and squat correctors for the HECK were determined on March 10, 1989 (DOY 69), at Craney Island fuel pier in Norfolk, Virginia using the level rod method. No alterations have been made to HECK that would change these values.

Settlement and squat values were applied on line to hydrographic soundings via the HDAPS offset table.

G5. Heave, Roll, Pitch Sensor and Correctors

Heave is measured by a Datawell B.V. (S/N 19110-C) heave, roll, and pitch sensor (HIPPY) located midships near the transducer. The sensor gathers on line data which is applied to the soundings in near real time. All data acquired in the echosounder mode have been corrected by applying HIPPY correctors.

G6. Tide Corrections

The tidal datum for this survey was mean lower low water (MLLW). The tide station at Hampton Roads was the reference station for this survey. No tide stations were established by the HECK in support of this survey. Approved tides were applied during office processing.

All hydrographic depths have been corrected for predicted tides using the zone correctors specified in the project instructions. Tidal correctors were applied on line via the HDAPS predicted tide table.

H. CONTROL STATIONS *See section 2.a. of the Evaluation Report*

The horizontal datum for this project is the North American Datum of 1983 (NAD 83). All stations used were existing control recovered by HECK personnel. All coordinates were taken from NGS Geodetic Control Data. No new stations were established. A list of the horizontal control stations appears in appendix III, LIST OF HORIZONTAL CONTROL STATIONS submitted with this survey. One station, Chesapeake Light, lies seaward of the high water line and is a fixed navigational aid.

I. HYDROGRAPHIC POSITION CONTROL *See section 2.a. of the Evaluation Report.*

Position control was multiple LOP, utilizing Motorola Mini-Ranger shore stations. Control station positions were entered into the HDAPS Control Station Tables. (See APPENDIX III, LIST OF HORIZONTAL CONTROL STATIONS). The appropriate Mini-Ranger codes were attached to the station number on this table.

Baseline calibration was performed on July 25, 1990 (DOY 206). the data for RPU S/N H0375, R/T S/N 3409 is included in the separates binder of this report.

Equipment serial numbers appear as part of the header information on each days data print out.

System checks were conducted in accordance with the Field Procedures Manual and appear as HDAPS screen dumps on the data printouts.

All survey offsets were applied on-line using the HDAPS Offset Table.

At no time during this project did the maximum residual consistently exceed 0.5 mm at the survey scale (5 meters) nor did the 95% confidence ECR consistently exceeded 1.5 mm at the survey scale (15 meters). Data not meeting these requirements were examined and high residuals either accepted or smoothed and high ECR's smoothed or rejected.

J. SHORELINE *See section 2.b. of the Evaluation Report*

Not applicable as per project instructions.

K. CROSSLINES See section 3.a of the Evaluation Report.

Not applicable as per project instructions.

L. JUNCTIONS See section 5. of the Evaluation Report

Not applicable as per project instructions.

M. COMPARISON WITH PRIOR SURVEYS See section 6. of the Evaluation Report

With the exception of the two AWOIS items, 2940 and 7526, all items on this survey originate from and were compared to survey H-10337.

Investigation of the assigned items originating with H-10337 yielded the following results:

( ) ESTIMATED HGTS OF OBSTRS

ITM# (Prior Survey) / POS # (Present Survey SS)	lat (N)	lon (W)	RESULTS (ht/dpth)	RECOMMEND
1 POS# 919-922 +	36°49'43.94"	075°48'02.67"	N/F**	NONE CONCUR
2 ↓ 866-867 +	36°50'25.15"	075°50'10.84"	N/F	NONE CONCUR
3 90008 864.18	36°50'34.58"	075°50'16.08"	.7/15.8 (15.7)	INSIG.** DO NOT CHART
4 90009 915.21	36°50'16.48"	075°48'08.92"	1.7/16.1 (16.0)	INSIG. SEE SECTION 6.a OF THE E+A REPT.
5 923-924 +	36°49'37.79"	075°48'32.16"	N/F	NONE CONCUR
6 868.07	36°49'44.38"	075°48'43.04"	0/16.4	INSIG. CONCUR, DO NOT CHART
7 833-835 +	36°51'21.98"	075°51'50.13"	N/F	NONE CONCUR
8 90003 836-837	36°51'23.37"	075°51'18.97"	.5 N/F 16.4 (15.8)	NONE INSIG - DO NOT CHART
10 90004 848.03	36°51'19.17"	075°50'54.31"	.5/16.2 (15.7)	INSIG
90005 848.05	36°51'19.23"	075°50'53.56"	.6/16.3 (15.7)	INSIG
90006 848.18	36°51'19.44"	075°50'50.40"	.5/16.3 (15.8)	INSIG
90007 850.25	36°51'20.41"	075°50'50.24"	.5/16.3 (15.8)	INSIG
11 90002 831-832	36°51'28.2"	075°51'53.48"	.7 N/F 16.5 (15.8)	NONE INSIG - DO NOT CHART
904-911 +	36°51'28.2"	075°51'53.48"	N/F	NONE CONCUR
12 842.18	36°51'33.34"	075°51'11.36"	0/16.2	INSIG CONCUR
844.24	36°51'33.11"	075°51'12.84"	0/16.2	INSIG CONCUR
846.29	36°51'33.15"	075°51'10.25"	0/16.1	INSIG CONCUR
13 856.16	36°51'33.17"	075°50'33.92"	0/16.9	INSIG CONCUR
14 824-827 +	36°51'42.72"	075°52'45.81"	N/F	NONE CONCUR
15 852.16	36°51'50.62"	075°50'52.39"	1.8/15.5	NOTE*
854.23	36°51'52.10"	075°50'51.32"	1.9/15.8	NOTE*
16 822-823 +	36°51'51.46"	075°53'02.63"	N/F	NONE CONCUR
17 90001 828-830	36°52'27.11"	075°52'21.00"	.8/16.3	INSIG See section 6.c. of the E+A REPT.
890-899 +	36°52'27.11"	075°52'21.00"	N/F	NONE CONCUR
18 862.22	36°51'02.04"	075°50'23.83"	0/16.7	INSIG CONCUR - DO NOT CHART

NOT SHOWN ON PRESENT SURVEY

SEE SECTION 6.b OF THE E+A REPORT

AWOIS 8152 SSV 6/9/92

** N/F=NOTHING FOUND
** INSIG.=INSIGNIFICANT TARGET

NOTE*: The item was investigated by ships divers on DOY 276, and found to be a sunken Coast Guard buoy. Coast Guard ATONS group was contacted and the buoy will be recovered by the USCGC COWSLIP. Correspondence concerning it's salvage will be forwarded to N/CG244. Recommend that nothing be charted. Concur. Removed. See USCG LETTER dated April 25, 1991 appended to this report.

+ These geodetic positions originate with the prior survey H-10337 (1990) item numbers

Comparison of soundings showed good agreement with random differences of less than 0.3 meters.

N. COMPARISON WITH THE CHART

See Section 7. of the Evaluation Report.

Comparison of the two AWOIS items were made to NOS charts 12207, 16th ED., AUG 3, 1985 / 12221, 57th ED., JAN 28, 1989. The results of these comparisons are as follows:

AWOIS	POS #	lat	lon	RESULTS (ht/dpth)	RECOMMEND
2940	927.25	36/51/19.16	075/51/05.06	2.1/16.3	NOTE-1
7526	872-888	36/51/49.43	075/48/00.74	N/F	NOTE-2

NOTE-1: The item was investigated by ship's divers on DOY 276. The item located matches the AWOIS description. A detached position and diver held leadline least depth were obtained. Recommend revising the charted symbol to an "obstruction, least depth 14.2 meters" at the surveyed position. Concur. See also Section 7.a. of the Evaluation Report.

NOTE-2: Additional 200% side scan coverage was accomplished on DOY 275. No contacts were located in this area. Recommend deletion of the charted obstruction symbol. Concur. AWOIS item #7526 is considered disproved. Delete from the Chart.

No dangers to navigation were submitted as a result of this survey.

O. ADEQUACY OF SURVEY

This survey is complete and adequate to resolve all items assigned for the purposes of supplementing survey H-10337 and updating the charts of the survey area.

P. AIDS TO NAVIGATION

No aids to navigation are located within the survey area.

Q. STATISTICS

ITEM for... NOAA Ship HECK	AMOUNT
1. Total No. of Positions	112 Fixes
2. Lineal NM of Soundings	5.7 NMi
3. Square NM Hydrography	.5 NMi^2
4. Days of Production	2 Days
5. Bottom Samples	None
6. Tide Stations Established	None
7. Current Stations Established	None
8. Velocity Casts Performed	1 Cast
9. Magnetic Stations Established	None
10. Detached Positions	2

R. MISCELLANEOUS

No anomalies in either tide or current were noted. No bottom samples were taken. Weather conditions are noted in the header information of each days data.

S. RECOMMENDATIONS See section 9. of the Evaluation Report.

Recommendations concerning specific items are located in sections M and N of this report.

T. REFERRAL TO REPORTS

None

Respectfully Submitted,

Kevin N Harbison

Kevin N. Harbison, LTJG, NOAA
Junior Officer
NOAA Ship HECK

VII. LETTER OF APPROVAL

Field operations contributing to the accomplishment of this survey were conducted under my direct supervision with frequent personal checks of progress and data quality. This report, fieldsheets, and data records have been closely reviewed and are complete and adequate for charting.

Stanley R. Iwamoto, LCDR, NOAA
Commanding Officer
NOAA Ship HECK

LIST OF HORIZONTAL CONTROL STATIONS

	NUMBER	NAME		POSITION
*	203	~~Cape Henry Light~~	36/55/34.911	076/00/25.834
	215	Chesapeake Light, 1966	36/54/16.697	075/42/45.856
	216	H-52VA ~~ET. Story~~ 1980	36/55/50.100	076/01/52.823
	217	Dam Neck BOQ, 1981	36/47/18.061	075/57/33.733

* Del Norte Site at Cape Henry LTHO, 1977

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: February 20, 1991

MARINE CENTER: Atlantic

OPR: D111-HE-90

HYDROGRAPHIC SHEET: FE-354SS

LOCALITY: Chesapeake Bay Entrance, VA.

TIME PERIOD: October 2 - 3, 1990

TIDE STATION USED: 863 8863 Chesapeake Bay Bridge Tunnel, VA.
LAT. 36 58.0'N LONG. 76 6.8'W

PLANE OF REFERENCE (MEAN LOWER LOW WATER): = 24.84 ft.

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: = 2.7 ft.

REMARKS: RECOMMENDED ZONING

Apply a x1.26 range ratio to all heights, and a -0 hr. 40 min. time correction for Chesapeake Bay Bridge Tunnel.

James L. Hubbard

CHIEF, TIDAL DATUM QUALITY
ASSURANCE SECTION

NOAA FORM 76-155
(11-72)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

GEOGRAPHIC NAMES

SURVEY NUMBER

FE-354 SS

Name on Survey	A ON CHART NO.	B ON PREVIOUS SURVEY NO.	C ON U.S. QUADRANGLE MAPS	D FROM LOCAL INFORMATION	E ON LOCAL MAPS	F P.O. GUIDE OR MAP	G RAND MCNALLY ATLAS	H U.S. LIGHT LIST	K	
ATLANTIC OCEAN (title)										1
CHESAPEAKE BAY (title)										2
VIRGINIA (title)										3
										4
										5
										6
										7
										8
										9
										10
										11
										12
										13
										14
				Approved:						15
										16
				Charles C. Harrington						17
				Chief Geographer - NOS/CG2x5						18
				MAR 20 1992						19
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NOAA FORM 76-155 SUPERSEDES C&GS 197

MARINE SAFETY NEWSLETTER
U.S. COAST GUARD

MARINE SAFETY OFFICE
HAMPTON ROADS

CBL

See 13.2

DECEMBER - 1991
MARINE SAFETY OFFICE HAMPTON ROADS

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FIGURES & PAGE

DEPARTMENT OF TRANSPORTATION

DEEP DRAFT VESSEL TRANSITS IN NORFOLK HARBOR REACH CHANNEL

During our August 1991 Towing Industry Focus Group meeting, local operators expressed concerns about the transit of heavily laden collars from Newport News to Norfolk. On occasion, they will take on partial cargo loads at Pier IX or Dominion Terminals Association (DTA), then transit to Norfolk Southern Terminal at Lamberts Point for additional cargo loading. These collars often have drafts in excess of forty-five feet which restricts their transit to the green buoy marked side (outbound) of Norfolk Harbor Reach which is dredged to fifty feet. Vessels transiting Norfolk Harbor Reach should be aware that these coal ships may be unable to move to starboard in the channel due to their drafts. Vessel masters and operators should initiate early communication between their vessels to ensure agreement on meeting or passing arrangements in accordance with Rule 34 of the Inland Rules.

To assist in ensuring safe passage of inbound vessels on the green buoy side of Norfolk Harbor Reach, we request that vessel masters, through their agent, notify us at least four hours in advance of such a transit so that the Captain of the Port may institute a safety advisory to advise other mariners in the area.

OIL TRANSFERS AT ANCHORAGE

The Captain of the Port (COTP) reminds masters and agents that no vessel at anchor or at a mooring within an anchorage may transfer oil to another vessel unless the vessel has given the COTP at least four hours advance notice of time and place of event. This requirement can be found in 33 CFR 110.168(c)(11). The notice of transfer may be combined with the advance notice of arrival required by 33 CFR 160. Proper advance notice will allow the COTP to anticipate the possibility of problems, and will give the COTP the opportunity to advise vessel masters of maritime and weather occurences which may conflict with their oil transfer operations. This proactive measure will aid in keeping the entire port of Hampton Roads safer.

NEW TRAFFIC SEPARATION SCHEME

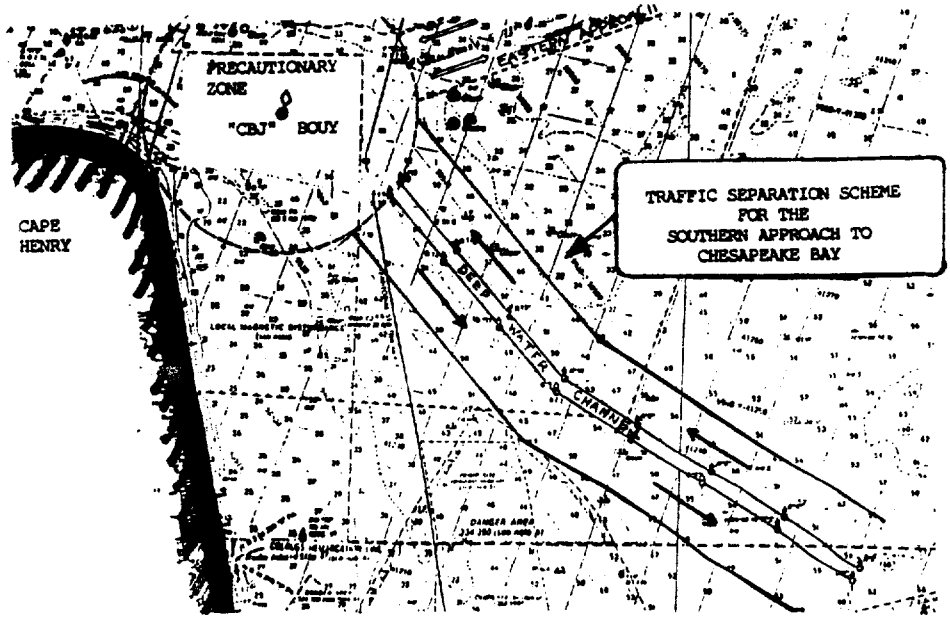
A new Traffic Separation Scheme (TSS) for the southern approach to Chesapeake Bay went into effect in November. Proposed Rules to align and reconfigure the deep water channel with the entrance to the Chesapeake Bay for the TSS were published in the Federal Register on September 6, 1990. The International Maritime Organization (IMO) granted final approval of the TSS in May 1991, and Final Rules were expected to be published in the Federal Register in late November.

The deep water route consists of a 1300 foot wide channel with a depth of fifty feet stretching about seven miles to the southeast of buoy CBJ, and connects with the Precautionary Area northeast of Cape Henry. Only vessels drawing more than forty-five feet and Navy aircraft carriers will be allowed to transit within the 1300 foot channel.

On each side of the deep water route, inbound and outbound traffic lanes are 3/4 nautical miles in width for use by all other vessels. Note that no buoys mark the outboard boundaries of these traffic lanes.

The Eastern Approach to Chesapeake Bay remains unchanged from the current configuration.

Vessel agents should notify their clients of the new TSS prior to a vessel's arrival. The COTP Port Safety Office has brochures available on the new TSS suitable for faxing. For further information on this project please contact the Port Safety Office at 441-3290 or the Fifth Coast Guard District, Aids to Navigation Branch at 398-6487.



LOCAL NOTICE TO MARINERS

The Commander, Fifth Coast Guard District, Aids to Navigation Branch publishes a weekly Local Notice to Mariners. This pamphlet includes information concerning aids to navigation, dredging operations, marine events, firing exercises, bridges, shoaling, etc., from Tom's River, NJ, to the North Carolina/South

Southern Approach (Positions are based on NAD 83)

(a) An inbound traffic lane is established between separation lines running through the following geographical positions:

(1) 36°50.33' N., 75°46.29' W.
(2) 36°52.90' N., 75°51.52' W.
(3) 36°55.96' N., 75°54.97' W.
(4) 36°55.11' N., 75°55.23' W.
(5) 36°52.35' N., 75°52.12' W.
(6) 36°49.70' N., 75°46.80' W.

(b) An outbound traffic lane is established between separation lines running through the following geographical positions:

(7) 36°49.52' N., 75°46.94' W.
(8) 36°52.18' N., 75°52.29' W.
(9) 36°54.97' N., 75°55.43' W.
(10) 36°54.44' N., 75°56.09' W.
(11) 36°51.59' N., 75°52.92' W.
(12) 36°48.87' N., 75°47.42' W.

(c) A deep-water route is established in the Southern Approach of the traffic separation scheme "In the Approaches to Chesapeake Bay" between the following geographical positions of the traffic separation scheme:

(13) 36°55.11' N., 75°55.23' W.
(14) 36°52.35' N., 75°52.12' W.
(15) 36°49.70' N., 75°46.80' W.
(16) 36°49.52' N., 75°46.94' W.
(17) 36°52.18' N., 75°52.29' W.
(18) 36°54.97' N., 75°55.43' W.

Notes: (a) It is recommended that the following vessels use the deep water route when bound for Chesapeake Bay from sea or to sea from Chesapeake Bay:

Deep draught vessels, draughts defined as greater than 13.5 meters/45 feet in fresh water, and naval aircraft carriers:

(b) It is recommended that a vessel using the Deep-Water Route:

1. Announce its intention on VHF-FM channel 16 as it approaches Chesapeake Bay Southern Approach Lighted Whistle Buoy CB on the south end, or Chesapeake Bay Junction Lighted Buoy CBJ, on the north end of the route.

2. Avoid, as far as practicable, overtaking other vessels operating in the Deep-Water Route.

3. Keep as near to the outer limit of the route which lies on the starboard side as is safe and practicable.

(c) All other vessels approaching the Chesapeake Bay traffic separation scheme should use the appropriate inbound or outbound traffic lane of the Chesapeake Bay TSS.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Office of NOAA Corps Operations
NOAA Ship HECK S-591
439 W. York Street
Norfolk, VA 23510-1114

December 13, 1990

MEMORANDUM FOR: Commander Christopher B. Lawrence, NOAA
Chief, Atlantic Hydrographic Ssection

FROM : Lieutenant Commander Stanley R. Iwamoto, NOAA
Commanding Officer, NOAA Ship HECK

SUBJECT : Removal of Sunken Buoy - AWOIS #8152 (55V 6/15/92)

On October 22, 1990 at 2030 hours the buoy referred to in FE-354/~~345SS~~ as WHITING item 15* was raised from the bottom. The sinker and several shots of chain were also recovered during the operation. The operation included dive support from the NOAA ship HECK and buoy tender support from the USCGC COWSLIP. Photographs will follow as soon as they are developed by the COWSLIP. Participating divers included LT Wilkes, LT Crozer, and LTJG Harbison.

* HECK item #8. See also USCG Letter dated April 25, 1991 Appended to this report.

3.14.91 LJF

U.S. Department of Transportation
United States Coast Guard

Commanding Officer
USCGC COWSLIP (WLB 277)

MAILING ADDRESS:
4000 Coast Guard Blvd.
Portsmouth, VA. 23703
Tel: (804) 483-8770

16503
April 25, 1991

Atlantic Marine Center Hydrographic Section
Attn: Ms. Fetterly
NCG 2441
439 West York St.
Norfolk, Va. 23510

SUNKEN OBSTRUCTIONS RECOVERED BY USCGC COWSLIP AND NOAA SHIP HECK

As previously discussed, I am forwarding as enclosure (1), a summary of sunken obstructions recovered by CGC COWSLIP and NOAA SHIP HECK.

Additionally, the HECK advises that remnents of an articulated light (i.e., sinker and a portion of the articulated structure) are located in position 36-53-41.84N, 075-54-09.60W (NAD 83). Attempted recovery on February 27, 1991 was unsuccessful due to weather. Intend to reschedule the recovery as operations permit.

Sincerely,

T. W. FLYNN
Lieutenant, U. S. Coast Guard
Executive Officer
By direction of the Commanding Officer

Encl: (1) Summary of Sunken Obstruction Recovery Operations

FAXED TO N/CG241

OBJECTS RECOVERED BY USCGC COWSLIP/NOAA HECK

DATE	OBJECT DESCRIPTION	LOCATION
22 OCT 90	9 X 38 BUOY HULL, 12700 LB SINKER, 90 FT 1 1/2 INCH DIE-LOCK AND 45 FT 1 1/2 INCH CHAIN	36-50-39N 75-48-36W
02 NOV 90	10,000 LB TRADITIONAL KEDGE ANCHOR (A MARKED HAZARD TO NAVIGATION)	36-55-59.5N 75-54-17.4W
08 NOV 90	4000 LB TRADITIONAL KEDGE ANCHOR	36-55-59.48N 76-54-19.53W
	18000 LB BUOY SINKER AND 1 SHOT OF 1 1/2 INCH CHAIN	36-54-28.29N 75-55-35.15W
30 JAN 91	BUOY HULL NR 8-70-06 FOR CHES BAY ENT LWB CBH, SINKER AND MOORING	36-55-02.36N 75-55-26.05W
05 FEB 91	18000 LB SINKER 135 FT 1 1/2 INCH CHAIN AND BRIDLE	36-50.73N 75-48.95

* NOTE ALL POSITIONS IN NAD 27

ENCLOSURE(1)

06/04/92

HYDROGRAPHIC SURVEY STATISTICS
REGISTRY NUMBER: FE-354SS

NUMBER OF CONTROL STATIONS	4
NUMBER OF POSITIONS	73
NUMBER OF SOUNDINGS	234

	TIME-HOURS	DATE COMPLETED
PREPROCESSING EXAMINATION	49	09/13/91
VERIFICATION OF FIELD DATA	61	05/22/91
ELECTRONIC DATA PROCESSING	17	
QUALITY CONTROL CHECKS	54	
EVALUATION AND ANALYSIS	83	05/08/92
FINAL INSPECTION	12	04/10/92
TOTAL TIME	276	

ATLANTIC HYDROGRAPHIC SECTION APPROVAL 05/11/92

NOAA FORM 61-29
(12-71)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

LETTER TRANSMITTING DATA

REFERENCE NO.

4N/CG244-46-92

DATA AS LISTED BELOW WERE FORWARDED TO YOU BY *(Check)*:

☐ ORDINARY MAIL ☐ AIR MAIL

☐ REGISTERED MAIL X☐ EXPRESS

☐ GBL *(Give number)* _____

TO:

Chief, Data Control Section, N/CG243
NOAA/National Ocean Service
Room 151, WSC-1
Rockville, MD 20852

DATE FORWARDED

10 June

NUMBER OF PACKAGES

1 box

NOTE: A separate transmittal letter is to be used for each type of data, as tidal data, seismology, geomagnetism, etc. State the number of packages and include an executed copy of the transmittal letter in each package. In addition the original and one copy of the letter should be sent under separate cover. The copy will be returned as a receipt. This form should not be used for correspondence or transmitting accounting documents.

FE-354SS

Virginia, Atlantic Ocean SE Approaches to Chesapeake Bay

1 Box containing:

- 1 **Original Descriptive Report with 8 page size smooth sheets**
- 1 Envelope containing smooth position and sounding overlays
- 1 Envelope containing Supplements
- 1 Envelope containing Appendices removed from the original Descriptive Report
- 1 Envelope containing Supplemental data removed from printouts
- 1 Cahier with final position listing, control listing, sounding listing and line file listing
- 2 Envelopes containing Side Scan Sonargrams, fathograms and daily printouts for: VESNO 9140 for JDs: 275 and 276

FROM: *(Signature)* Richard H. Whitfield

Richard H. Whitfield

RECEIVED THE ABOVE
(Name, Division, Date)

D. S. Clark
6/12/92

Return receipted copy to:

Atlantic Hydrographic Section, N/CG244
439 W. York Street
Norfolk, VA 23510-1114

NOAA FORM 61-29 SUPERSEDES FORM C&GS 413 WHICH MAY BE USED.

☆U.S.GPO:1983-0-864-008/1192

COAST AND GEODETIC SURVEY
ATLANTIC HYDROGRAPHIC SECTION
EVALUATION REPORT

SURVEY NO.: FE-354SS FIELD NO.: HE-10-8-90

Virginia, Atlantic Ocean, SE Approaches to Chesapeake Bay

SURVEYED: 02 October to 3 October 1990

SCALE: 1:10,000 PROJECT NO.: OPR-D111-HE-90

SOUNDINGS: RAYTHEON DSF-6000N Echosounder and EG&G Model 260 Side Scan Sonar and Leadline

CONTROL: MOTOROLA FALCON 484 Mini-Ranger (Range/Range)

Chief of Party.....S. R. Iwamoto

Surveyed by.....D. W. Moeller
.....D. S. Wilkes
.....K. N. Harbison
.....W. R. Morris

Automated Plot by.....XYNETICS 1201 Plotter (AHS)

1. INTRODUCTION

a. This is primarily a side scan sonar survey to investigate and resolve items located by the NOAA Ship WHITING on survey H-10337 (1990). A RAYTHEON DSF-6000N fathometer was operated concurrently with the side scan sonar. The hydrography is considered reconnaissance hydrography and is not to be charted except for the shoalest sounding. A hand held leadline was used to determine least depths on items when dive operations were conducted.

b. Eight (8) 1:10,000 scale page size sheets were generated during office processing and are appended to this report. These plots are considered the smooth plots for this survey.

c. No unusual problems were encountered during office processing.

d. Notes in the Descriptive Report were made in red during office processing.

2. CONTROL AND SHORELINE

a. Control is discussed in sections H. and I. of the Descriptive Report.

Horizontal control used for this survey during data

acquisition is based upon the North American Datum of 1983 (NAD 83). Office processing of this survey is based on these values. The smooth sheets have been annotated with ticks showing the computed mean shift between the survey datum and the North American Datum of 1927 (NAD 27). To place the 1:10,000 scale sheets on the NAD 27 datum, move the projection lines 0.539 seconds (16.6 meters or 1.66 mm at the scale of the survey) north in latitude, and 1.275 seconds (31.6 meters or 3.16 mm at the scale of the survey) east in longitude.

b. There is no shoreline within the limits of this survey.

3. HYDROGRAPHY

a. Except as shown on the page size plots, the hydrographic data collected on this survey during side scan sonar operations is of reconnaissance value only and is not verified. Hydrography, run and shown on the page size plots included in this report, has had all correctors applied and may be used to supplement the charted hydrography in the common area.

b. No crosslines were run during present survey operations.

c. The scarcity of sounding data precluded the drawing of depth curves.

d. Determination of least depths is considered adequate.

4. CONDITION OF SURVEY

The smooth sheets and accompanying overlays, hydrographic records, and reports are adequate and conform to the requirements of the HYDROGRAPHIC MANUAL, SIDE SCAN SONAR MANUAL, FIELD PROCEEDURE MANUAL, and Project Instructions with the following exceptions:

a. In several investigations the side scan sonar lines were not run straight, but were run while turning. This adversely affects the imagery of the side scan sonar and could hinder detection of obstructions.

b. No critical system checks were performed. System checks using the screen dump method are considered invalid because only 2 LOP's were used in the solution. The maximum residuals can not be checked when using only two LOPs.

5. JUNCTIONS

There are no contemporary junctional surveys.

6. COMPARISON WITH PRIOR SURVEYS

H-10337 (1990)

The present survey was conducted to ascertain information on specific items that were selected for additional investigation. In the cases where investigations provided conclusive proof that the item or feature was found by the present survey, the present survey is considered adequate to supersede information shown on the prior survey H-10337 (1990). In cases where the present survey did not provide sufficient information to positively conclude that an item was disproved the present survey may be considered supplemental to the prior survey.

a. Item 4 is an uncharted obstruction in Latitude 36°50'16.64"N, Longitude 75°48'10.71"W with an estimated depth of 14^7 meters (48 ft) originating with the prior survey. An obstruction with an estimated depth of 15 meters (49 ft) was found in Latitude 36°50'16.48"N, Longitude 75°48'10.53"W during side scan sonar operations, and is considered to be the same feature. A least depth was not obtained on the item. The obstruction with an estimated depth of 14^7 meters was brought forward from the prior survey to supplement the present survey. It is recommended that an obstruction with an estimated depth of 14^7 meters (48 ft) (14^7 *Obstr (A)*) be charted as shown on H-10337 (1990). It is also recommended that additional work be conducted at an opportune time to obtain a least depth on the obstruction. See sheet 5 of 8.

48ft obstn was removed sec L-964/h2

b. Item 10 is an uncharted obstruction in Latitude 36°51'20.55"N, Longitude 75°50'50.87"W with an estimated depth of 14^3 meters (47 ft) originating with the prior survey. Four (4) side scan sonar contacts with deeper estimated depths, listed in section M. of the Descriptive Report (contacts 848.03S, 848.05S, 848.08P, and 850.25S), were found by the present survey. A least depth was not obtained on the item. The obstruction with an estimated depth of 14^3 meters was brought forward from the prior survey to supplement the present survey. It is recommended that limits and obstructions with an estimated depth of 14^3 meters (48 ft) (14^3 *Obstrs (A)*) be charted as shown on the present survey. It is also recommended that additional work be conducted at an opportune time to obtain a least depth on the shoalest obstruction within the limits. See sheet 2 of 8.

An additional uncharted obstruction with an estimated depth of 14[9] meters (49 ft) originating with the prior survey in Latitude 36°51'21.93"N, Longitude 75°50'54.48"W was neither investigated nor discussed. The obstruction was brought forward from the prior survey to supplement the present survey. This obstruction is included within the limits recommended for charting in the previous paragraph. The obstruction should not be charted unless the scale of the chart allows. See also sheet 2 of 8.

c. Item 17 is an uncharted obstruction in Latitude 36°52'27.11"N, Longitude 75°52'21.00"W with an estimated depth of 16[1] meters (53 ft) originating with the prior survey. This item was recommended for further investigation in the Project Instructions for the present survey. The contact was considered insignificant during office processing of H-10337 (1990) and is not shown on the prior survey H-10337 (1990). An obstruction with an estimated depth of 15[6] meters (51 ft) in Latitude 36°52'27.08"N, Longitude 75°52'21.42"W was located by the present survey. This item is located with the limits of the deep water route in the approaches to the Chesapeake Bay. It is recommended that an obstruction with an estimated depth of 15[6] meters (51 ft) (15[6] *Obstr (A)*) be charted as shown on the present survey. It is also recommended that additional work be conducted at an opportune time to obtain a least depth on the obstruction. See sheet 1 of 8.

7. COMPARISON WITH CHARTS 12207 (16th Ed., Aug 3/85)
12221 (57th Ed., Jan 28/89)

a. Hydrography

The charted hydrography originates with prior surveys previously discussed in the Evaluation Report for H-10337 (1990) and needs no further consideration. Attention is directed to the following:

AWOIS item #2940 is a charted dangerous submerged obstruction with a wire drag clearance depth of 44 feet (13[4] m) in Latitude 36°51'19.8"N, Longitude 75°51'06.0"W. The obstruction was first reported by Notice to Mariners No. 7 of 1944 and was subsequently located and cleared by H-9871WD (1976). The obstruction was located in Latitude 36°51'19.16"N, Longitude 75°51'05.06"W by the present survey, and a diver least depth of 14[5] meters (47 ft) on an obstruction was obtained. It is recommended that the dangerous submerged obstruction with a wire drag clearance depth of 44 feet (13[4] m) be deleted from the chart and an obstruction with a depth of 14[5] meters (47 ft) (14[5] *Obstr*) be charted as shown on the

present survey. See sheet 6 of 8.

b. Aids to Navigation

Four (4) floating aids to navigation are in the area of the present survey. These aids were not located as required in section 4.1.1. of the Project Instructions. The charted aids to navigation appear adequate to serve their intended purposes.

8. COMPLIANCE WITH INSTRUCTIONS

This survey adequately complies with the Project Instructions.

9. ADDITIONAL FIELD WORK

This is an adequate side scan sonar survey. With the exception of the items listed in section 6a., b., and c. of this report.

Maxine Fetterly
Cartographic Technician
Verification of Field Data

Richard H. Whitfield
Cartographer
Evaluation and Analysis

Deborah A. Bland
Cartographic Technician
Verification Check

APPROVAL SHEET
FE-354SS

Initial Approvals:

The completed survey has been inspected with regard to survey coverage, delineation of depth curves, development of critical depths, cartographic symbolization, and verification or disproval of charted data. The digital data have been completed and all revisions and additions made to the smooth sheet during survey processing have been entered in the magnetic tape record for this survey. Final control, position, and sounding printouts of the survey have been made. The survey records and digital data comply with NOS requirements except where noted in the Evaluation Report.

Robert G. Roberson Date: 11 May 1992
Robert G. Roberson
Chief, Evaluation and Analysis Team
Atlantic Hydrographic Section

I have reviewed the smooth sheet, accompanying data, and reports. This survey and accompanying digital data meet or exceed NOS requirements and standards for products in support of nautical charting except where noted in the Evaluation Report.

Christopher B. Lawrence Date: 11 May 1992
Christopher B. Lawrence, CDR, NOAA
Chief, Atlantic Hydrographic Section

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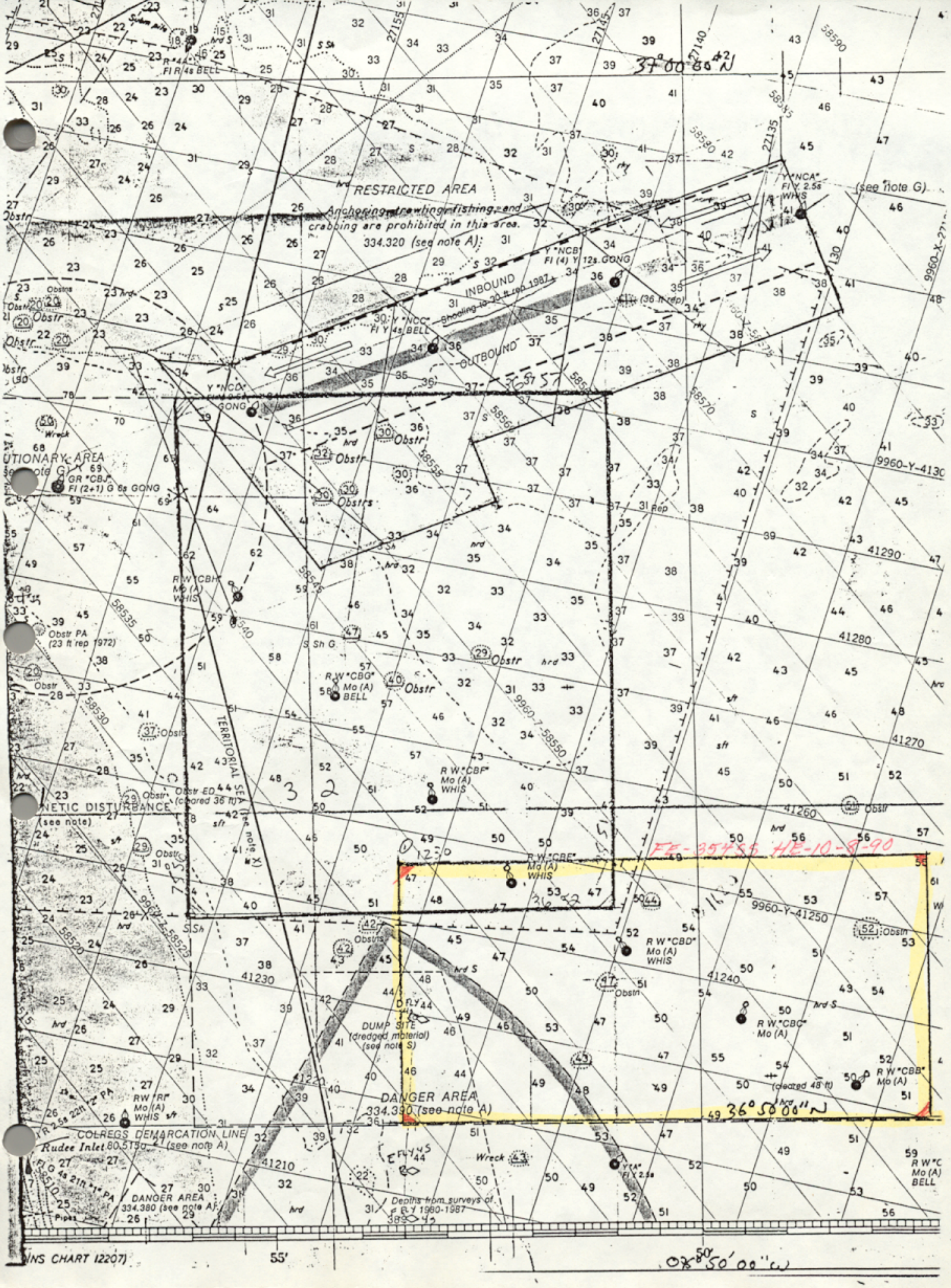
Final Approval:

Approved: J. Austin Yeager Date: 5/17/94
J. Austin Yeager
Rear Admiral, NOAA
Director, Coast and Geodetic Survey


37°00'00"N
RESTRICTED AREA
Anchoring, trawling, fishing, and crabbing are prohibited in this area.
334.320 (see note A)
INBOUND
OUTBOUND
Shoaling to 30 ft rep 1987
Y "NCB" Fl (4) Y 12s GONG
Y "NCC" Fl Y 4s BELL
Y "NCD" Fl Y 6s GONG
Y "NCA" Fl Y 2.5s WHIS
(see note G)
CAUTIONARY AREA (see note G)
GR "CBJ" Fl (2+1) G 6s GONG
R W "CBH" Mo (A) WHIS
R W "CBG" Mo (A) BELL
R W "CBF" Mo (A) WHIS
R W "CBE" Mo (A) WHIS
R W "CBD" Mo (A) WHIS
R W "CBC" Mo (A)
R W "CBB" Mo (A)
R W "C Mo (A) BELL
RW "RI" Mo (A) WHIS
TERRITORIAL SEA (see note X)
MAGNETIC DISTURBANCE (see note)
Obstr PA (23 ft rep 1972)
Obstr ED (cleared 36 ft)
FE-35455 HE-10-8-90
9960-Y-41250
DUMP SITE (dredged material) (see note S)
DANGER AREA 334.390 (see note A)
36°50'00"N
COLREGS DEMARCATION LINE 80.515 (see note A)
Rudee Inlet
DANGER AREA 334.380 (see note A)
Depths from surveys of 1980-1987
(cleared 48 ft)
Wreck
NS CHART 12207
55'
075°50'00"W

75° 52' 30"

75° 52' 00"

36° 52' 30"

16^{2}
16^{4}
16^{3}

15^{6} *Obstr (A)*

$16^{4}16^{4}$ 16^{3}
16^{6} 16^{5} 16^{2} 16^{3}
16^{6}

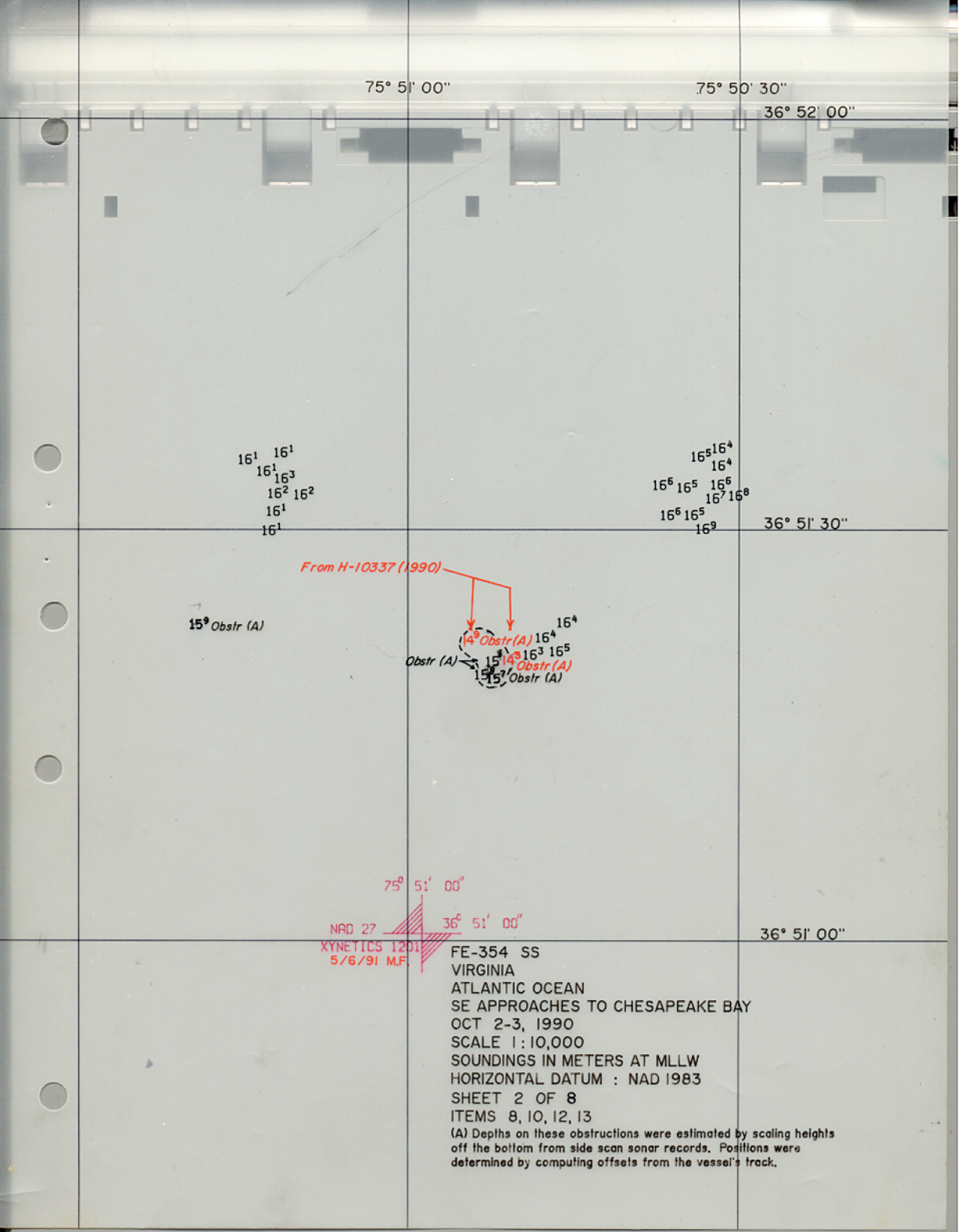
36° 52' 00"

FE-354 SS
VIRGINIA
ATLANTIC OCEAN
SE APPROACHES TO CHESAPEAKE BAY
OCT 2-3, 1990
SCALE 1:10,000
SOUNDINGS IN METERS AT MLLW
HORIZONTAL DATUM : NAD 1983
SHEET 1 OF 8
ITEMS 11 & 17

(A) Depths on these obstructions were estimated by scaling heights off the bottom from side scan sonar records. Positions were determined by computing offsets from the vessel's track.

75° 52' 30"
NAD 27 36° 51' 30"
XYNETICS 1201
5/6/91 M.F.

16^{3}
16^{3}
16^{4} 36° 51' 30"
15^{6} *Obstr (A)*
16^{5}
16^{5}
16^{2}
16^{1}



FE-354 SS
VIRGINIA
ATLANTIC OCEAN
SE APPROACHES TO CHESAPEAKE BAY
OCT 2-3, 1990
SCALE 1:10,000
SOUNDINGS IN METERS AT MLLW
HORIZONTAL DATUM : NAD 1983
SHEET 2 OF 8
ITEMS 8, 10, 12, 13

(A) Depths on these obstructions were estimated by scaling heights off the bottom from side scan sonar records. Positions were determined by computing offsets from the vessel's track.

75° 50' 30"

75° 50' 00"

36° 51' 00"

16⁶
16⁷
16⁵
16²
16¹

16²
16⁶
15⁷ Obstr (A)
16
16³
15⁴

36° 50' 30"

15
15²
15⁶
15⁹
15⁶
15¹

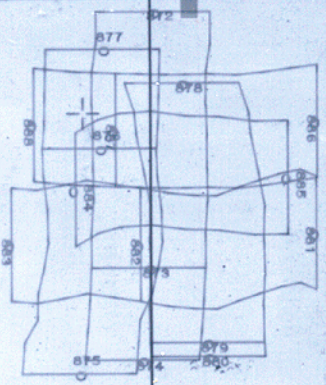
FE-354 SS
VIRGINIA
ATLANTIC OCEAN
SE APPROACHES TO CHESAPEAKE BAY
OCT 2-3, 1990
SCALE 1:10,000
SOUNDINGS IN METERS AT MLLW
HORIZONTAL DATUM : NAD 1983
SHEET 3 OF 8
ITEMS 2, 3, 18

(A) Depths on these obstructions were estimated by scaling heights off the bottom from side scan sonar records. Positions were determined by computing offsets from the vessel's track.

75° 50' 00"
NAD 27
36° 50' 00"
36° 50' 00"
XYNETICS 1201
5/6/91 M.F.

75° 48' 00"

36° 52' 00"



AWOIS 7526

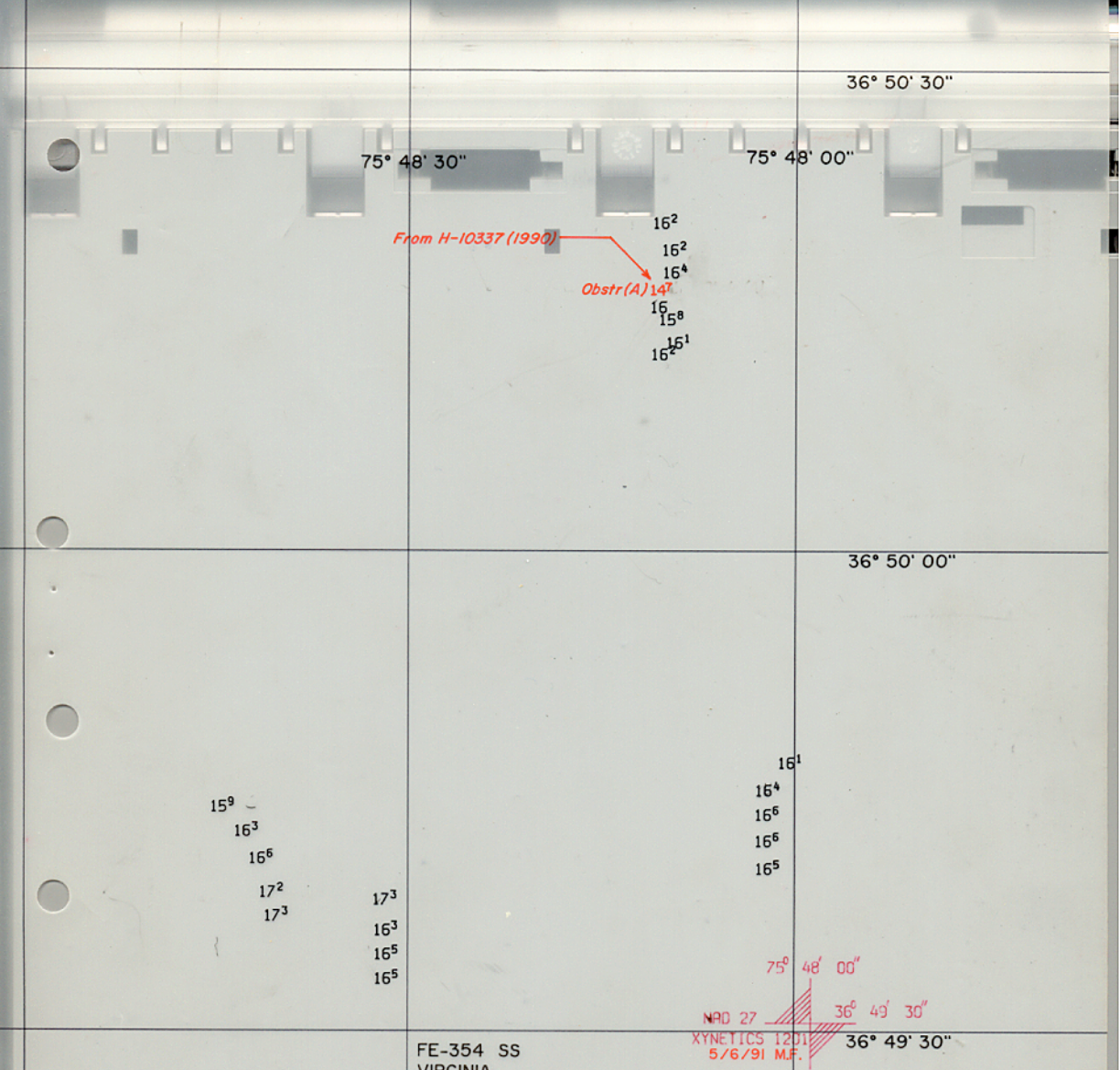
36° 51' 30"

FE-354 SS
VIRGINIA
ATLANTIC OCEAN
SE APPROACHES TO CHESAPEAKE BAY
OCT 2-3, 1990
SCALE 1:10,000
HORIZONTAL DATUM NAD 1983
SHEET 4 OF 8
AWOIS 7526

75° 46' 00"

36° 51' 00"

NAD 27
XYNETICS 1201
4/5/91 M.F.



FE-354 SS
VIRGINIA
ATLANTIC OCEAN
SE APPROACHES TO CHESAPEAKE BAY
OCT 2-3, 1990
SCALE 1 : 10,000
SOUNDINGS IN METERS AT MLLW
HORIZONTAL DATUM : NAD 1983
SHEET 5 OF 8
ITEMS 1, 4, 5, 6

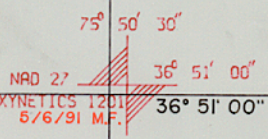
(A) Depths on these obstructions were estimated by scaling heights off the bottom from side scan sonar records. Positions were determined by computing offsets from the vessel's track.

75° 51' 00"

75° 50' 30"

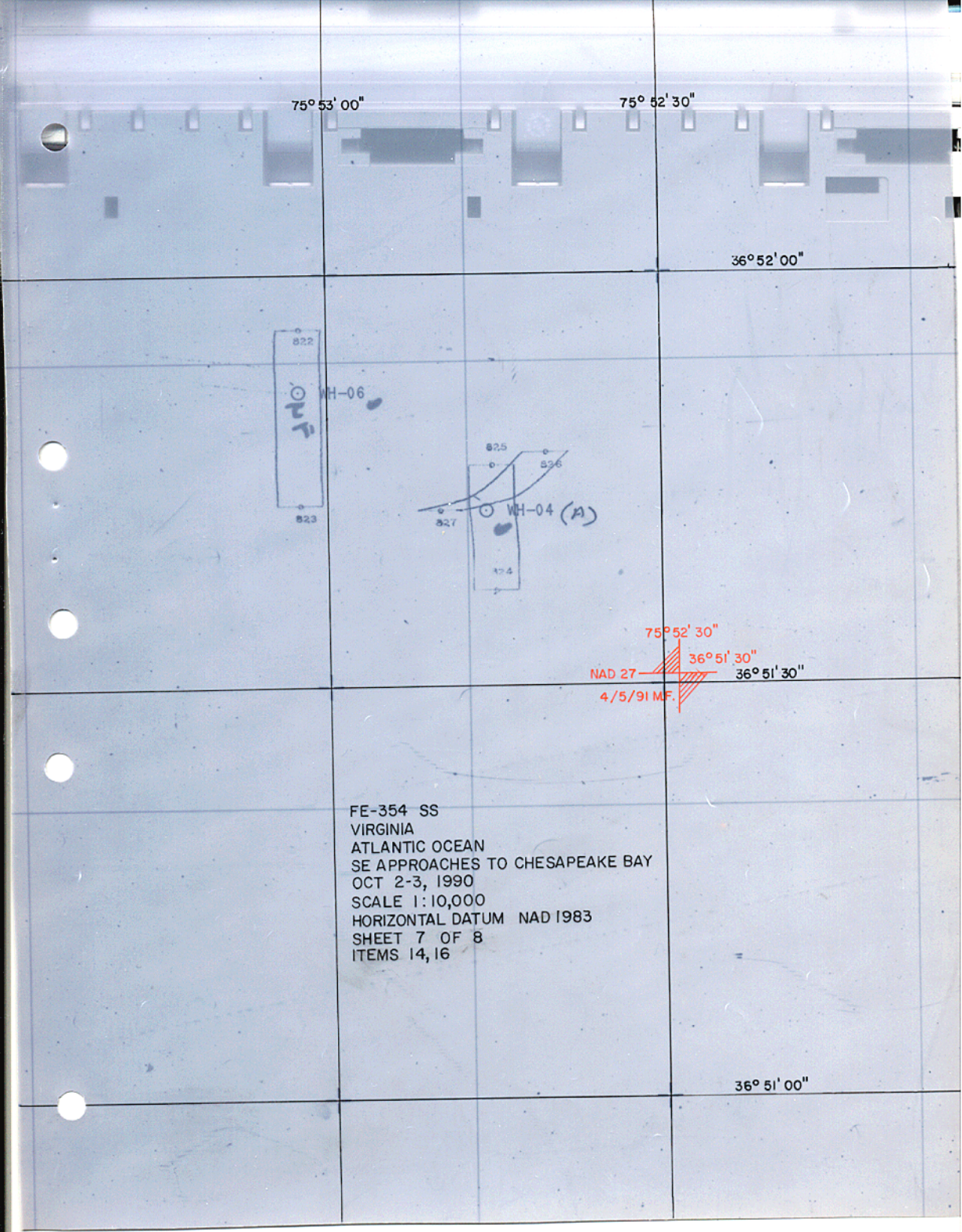
36° 51' 30"

14[5] Obstr



36° 51' 00"

FE-354 SS
VIRGINIA
ATLANTIC OCEAN
SE APPROACHES TO CHESAPEAKE BAY
OCT 2-3, 1990
SCALE 1:10,000
SOUNDINGS IN METERS AT MLLW
HORIZONTAL DATUM : NAD 1983
SHEET 6 OF 8
AWOIS 2940, ITEM 9



FE-354 SS
VIRGINIA
ATLANTIC OCEAN
SE APPROACHES TO CHESAPEAKE BAY
OCT 2-3, 1990
SCALE 1:10,000
HORIZONTAL DATUM NAD 1983
SHEET 7 OF 8
ITEMS 14, 16

75°52'30"

75°52'00"

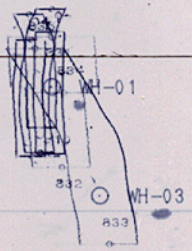
75°51'00"

36°52'00"

836

-04 (A)

36°51'30"



75°52'00"

36°51'00

NAD 27

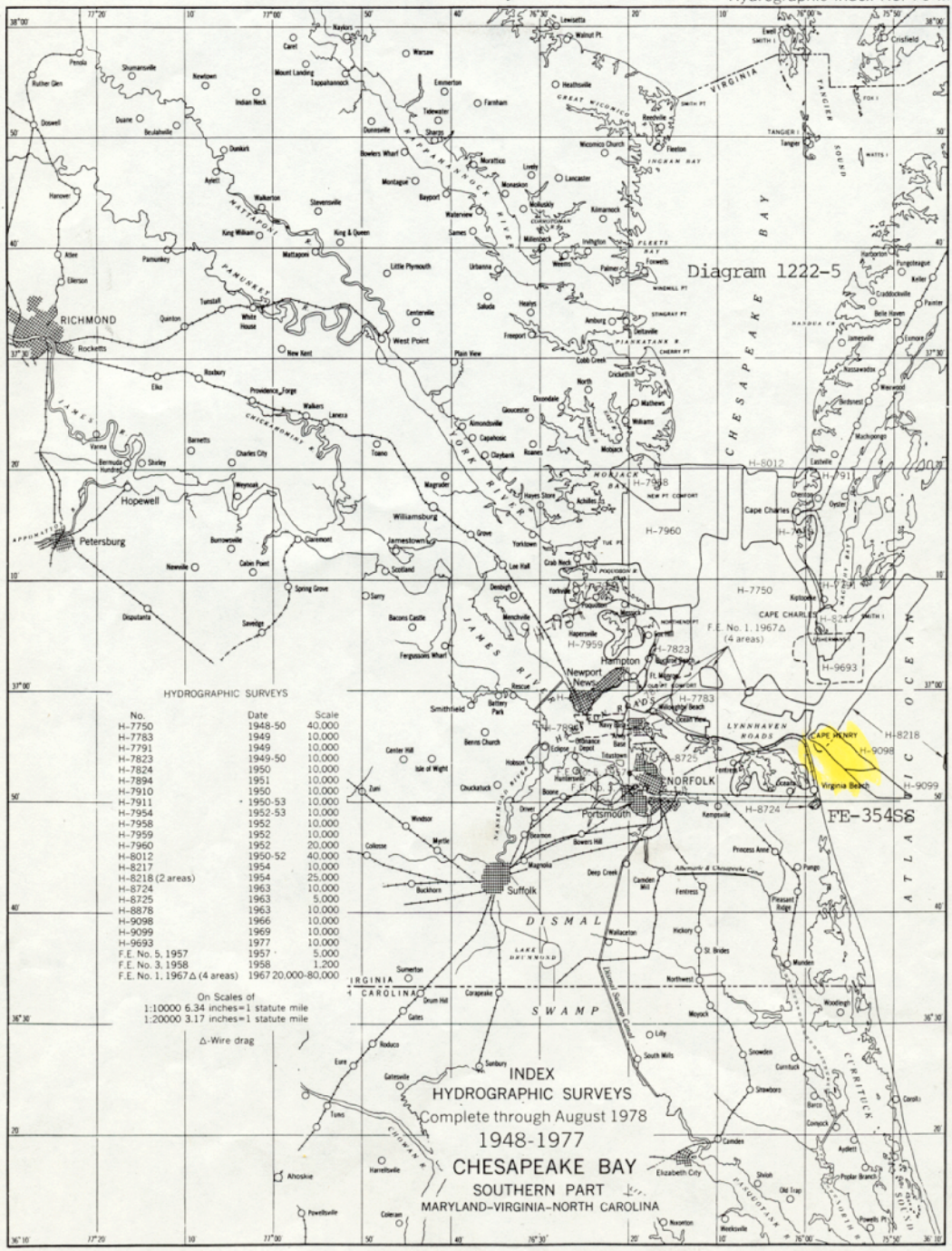
✓ 4/5/91 MF

36°51'00"

FE-354 SS
VIRGINIA
ATLANTIC OCEAN
SE APPROACHES TO CHESAPEAKE BAY
OCT 2-3, 1990
SCALE 1:10,000
HORIZONTAL DATUM: NAD 1983
SHEET 8 OF 8
ITEM 7

DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Ocean Survey
Rockville, Maryland

Hydrographic Index No. 70 M



HYDROGRAPHIC SURVEYS

No.	Date	Scale
H-7750	1948-50	40,000
H-7783	1949	10,000
H-7791	1949	10,000
H-7823	1949-50	10,000
H-7824	1950	10,000
H-7894	1951	10,000
H-7910	1950	10,000
H-7911	1950-53	10,000
H-7954	1952-53	10,000
H-7958	1952	10,000
H-7959	1952	10,000
H-7960	1952	20,000
H-8012	1950-52	40,000
H-8217	1954	10,000
H-8218 (2 areas)	1954	25,000
H-8724	1963	10,000
H-8725	1963	5,000
H-8878	1963	10,000
H-9098	1966	10,000
H-9099	1969	10,000
H-9693	1977	10,000
F.E. No. 5, 1957	1957	5,000
F.E. No. 3, 1958	1958	1,200
F.E. No. 1, 1967Δ (4 areas)	1967	20,000-80,000

On Scales of
1:10000 6.34 inches=1 statute mile
1:20000 3.17 inches=1 statute mile

Δ-Wire drag

INDEX
HYDROGRAPHIC SURVEYS
Complete through August 1978
1948-1977
CHESAPEAKE BAY
SOUTHERN PART
MARYLAND–VIRGINIA–NORTH CAROLINA

NOAA FORM 75-96
(10-83)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

MARINE CHART BRANCH

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. FE-354SS

INSTRUCTIONS

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.
1. Letter all information.
2. In "Remarks" column cross out words that do not apply.
3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

CHART	DATE	CARTOGRAPHER	REMARKS
12208	6/19/92	J. Robwsod	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 11 RECONSTRUCTION
12221	9/14/92	L. ARKenau	
			Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 88 Fully applied at Forward Prior To
			SIGNATURE
12220	1/26/93	L. Arkenau	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 55, APPD Thru CHT 12221
12200	1/27/93	L. Arkenau	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 54, APPD Thru CHT 12220
12207	1/28/93	L. Arkenau	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 27, APPD Thru CHT 12221
12205A	7/7/93	R. A. Lillis	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 23 Appl'd thru cht 12221
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED